SECTION 02718

SMALL DIAMETER
WATER SERVICE ASSEMBLIES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. All new residential domestic service lines shall be a minimum of 1-inch from the main to the meter unless otherwise approved by the WSD.

B. All new residential domestic meter assemblies shall be a minimum of 3/4-inch unless otherwise approved by the WSD. Meters can be smaller than service line size for residential services.

C. All new residential fire sprinkler assemblies shall be a minimum of 1-inch unless otherwise noted.

PART 2 - PRODUCTS

2.01 MATERIALS

A. All service assembly components in contact with potable water shall be certified No Lead or Lead Free.

B. The service assembly shall include a corporation cock, copper service pipe gooseneck, meter, meter box, and tapping saddle as required.

C. CORPORATION COCK: The corporation cock shall be of solid bronze suitable for tapping into the water main at a vertical angle. This cock shall be similar to Ford FB-1000. (4-Q-TA (1”))

D. SERVICE PIPE:

1. PEX; (1” through 2”) crosslinked polyethylene (PEXa), Type A rated for 160 psi working pressure at 73.4^0F. PEX pipe shall meet the requirements of ANSI/NSF 61 and AWWA C904 and be rated for buried installation. Pipe shall be Rehau, Municipex® or equal. PEXa shall be blue or white in color. All PEXa pipe shall be installed with insert stiffeners to prevent the collapse of water service tubing. Stiffeners shall be MARS Company, A Division of Floyd S. Salser Jr. & Associates. The use of PEXa pipe for water services is limited to single-family residential locations. PEXa pipe is not permitted in commercial, multi-family or institutional meter applications.

E. METER VALVES: Meter valves shall be Ford, double check meter yoke with a gripper joint.

F. WATER METERS:

1. 3-4" - 1-inch water meters shall be Sensus iPERL™, solid state, operated electromagnetic flow measurement system with a hermetically sealed, glass covered, electronic register with a programmable, 9-digit display meter.
2. Each meter shall meet or exceed the latest revision of AWWA C710 and shall be compliant with no-lead requirements. Must be compliant with NSF/ANSI Standard 61 Annex F and G. Maximum working pressure shall be 200 psi.
3. Register: The register must be an electronic device encapsulated in glass with 9 programmable digits utilizing a liquid crystal display (LCD). It will have indicators for flow direction, empty pipe, battery life and unit of measurement. The register must be hermetically sealed with a heat tempered class cover and be tamper resistant. The register shall not be removable from the measuring sensor. The register shall utilize a magnetic coupling technology to connect to a radio read of fixed based meter reading system in a pit set installation.
4. Radio Transceiver: Each meter shall include a SmartPoint 520M radio transceiver and be installed through the meter box lid.
5. Measuring Element: The measuring element shall be made of a non-corrosive, lead-free glass fiber reinforced, composite alloy material. A battery powered magnetic flow sensor utilizing silver/silver chloride electrodes will be utilized to measure the velocity of the water which is linearly proportional to the volume. Battery life shall be guaranteed life of 20 years. The measuring element will have no moving parts and will be specific for each size.
6. External Housing: The register and measuring element will be an integrated unit housed within a thermal plastic external casing. This integrated unit will not be removable from the external housing. The systems shall have the size and direction of water flow through the system imprinted on the external housing.

G. METER BOXES: Meter boxes for water service assemblies shall be plastic, rectangular meter boxes traffic rated, with non-locking cover and auto-read opening. Boxes shall be as follows:

1. 5/8"-3/4" – Oldcastle HW-1118BCF
2. 1' – Oldcastle HW-1527BCF

H. TAPPING SADDLES: Tapping saddles shall be used for tapping all PVC pipe and shall be Ford S70 series, Style A, and shall be AWWA threaded to accept the corporation cock specified above. Tapping saddle body and strap shall be made of brass alloy and shall be joined together with stainless steel pin and a silicon

bronze hex head bolt. Product shall conform to AWWA C800, NSF Standard 61 and be rated for 150 psi working pressure.

PART 3 – EXECUTION

3.01 PREPARATION

A. Make no taps on dry lines without approval from the WSD. Taps in newly installed water lines and existing lines shall be made by the Contractor.

B. The service line shall have a minimum of 18 inches cover. Prior to connecting meter, blow any accumulated trash out of the pipe.

3.02 INSTALLATION

A. All service lines to be installed under existing paved roads will be bored and jacked. A 2-inch schedule 40 PVC casing pipe shall be provided for new bored services or new services under roadways. Service line casing shall extend to a point 2 feet behind the sidewalk on each side of the roadway. No couplings shall be used on new service lines.

B. In general, install the meter box as near the ROW line as possible at the street right-of-way. Minimum horizontal spacing between water service and sewer service shall be 10 feet. Set plumb approximately 1 inch above the existing of proposed grade and so that surface drainage will not enter it. Fill from the existing or proposed grade to the top of the meter box at a slope of 1 inch in 12 inches. When the cut or fill slopes on streets extend beyond the street right-of-way, install the meter box at the top or toe of slope, as applicable, or as directed by the Owner. Meter boxes damaged by home builder will be responsibility of the home builder to reset or replace.

C. The service main shall not be taut from stop to cock. A gooseneck shall be left at the connection to the water main.

D. All PEXa pipe shall be installed with 14 gauge, THHN solid copper wire with coating installed in such manner that detection with WSD equipment is possible. The detection wire shall be continuous and shall be connected to the corporation stops, meter boxes, and/or valve boxes to facilitate connection to the WSD location equipment.

END OF SECTION